filtrates. He found that new-born rabbits are resistant to at least eight times the intravenous adult M. L. D. per kilogram of body weight. This fetal immunity (or insusceptibility) continues till about the fourth month, when the adult susceptibility begins to be demonstrable. Serum from the apparently immune baby rabbits will not passively immunize (or desensitize) adult rabbits.

Under the assumption that fetal pan-immunity is due to a positive chemical factor in rapidly growing tissues, Doctors McKhann and Chu [5] of Harvard Medical School have sought to isolate this factor for therapeutic study. Aqueous extracts of normal human placentas were separated into albumin and globulin fractions by ordinary fractionation technics. The globulin fraction thus obtained was found to be non-toxic for guinea-pigs and rabbits, and to contain no demonstrable estrus-producing hormone. As little as 0.08 milligram of this globulin neutralized a necrotizing dose of diphtheria toxin as shown by subsequent intradermal guinea-pig tests. The globulin also neutralized poliomyelitis virus *in vitro*. It blanched scarlet fever rash, in many cases the blanching effect being superior to that obtained in a control test with specific scarlet fever antitoxin.

Their most suggestive therapeutic effects, however, were in measles. Fifteen presumably non-immune children, accidentally exposed to this infection, were given intramuscular injections of human placental globulins within five days after exposure. Fourteen of them developed no signs or symptoms of measles. Three presumably non-immune children, similarly exposed, were each given 30 cubic centimeters adult human blood intramuscularly. All three developed modified measles. Two similarly exposed children, who through faulty histories were believed to be immune, were given no treatment. Both developed typical measles.

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SURGERY OF CHILDHOOD

In the rapid advance of the medical sciences there has been a great tendency toward specialization. Many feel, and probably rightly so, that this has been overdone. However, a high degree of efficiency has been attained in many fields which would not have been otherwise possible. Surgery of infancy and childhood is sufficiently different from adult surgery to warrant special attention. To obtain the best results, the pediatric surgeon must possess a definite understanding of childhood psychology, as well as a knowledge of the diseases of children.

It should be remembered that the surgeon must often approach the sick child in the guise of an enemy. With a shy child, the surgeon should pay little attention to the child at first, but should enter into a general and often irrelevant conversation with the parents or nurse, and finally lead up to the discussion of the patient's difficulty after the child has had an opportunity to "size-up" the surgeon. The child of the extravert type is better approached immediately as the center of attraction. He should be spoken to in a kindly, sympathetic, but manly manner, with an open frankness which will do much to allay any fears and will lead to full coöperation. He should not be told that he will have no pain unless this is true. It is necessary to feel one's way in each individual case, and the type of child must be determined instantly, in order to obtain the proper approach. This is really an art which may be acquired and developed to a high degree, but a thorough understanding of child psychology is also partly inborn. If the surgeon does not have a natural liking for children, he will not be able to gain the child's confidence as readily, or as often, as the surgeon who is especially fond of children. The little patient is usually an excellent reader of the inherent kindness on the part of the surgeon. Spoiled children can best be dealt with in the absence of their parents, and that the psychological problem here is twofold, is evident.

Some of the clearest, clinical histories available can be obtained from a child after the age of six or seven years. A few children will romance about their illness, but an understanding of child psychology will readily enable one to detect this. Many children will give a direct, simple and correct history. All minute details cannot always be elicited, but many can be filled in from the parents. The action, posture, gait, intensity and tone of the cry, or complaints, as observed by the parents, are important points. Children differ in their ability to tolerate pain and discomfort, just as do adults. The small size of the child, allowing for more correct physical findings, is a compensating factor for any lack of detail in the history. Tact and great gentleness must be exercised at the examination.

If the treatment is going to cause more than slight pain, an anesthetic should be administered. The child should never be told that he will not be hurt and then be taken by surprise. If this occurs, he will never trust the surgeon a second time. With some children, it is possible to set broken bones, open abscesses, etc., with local anesthesia, with full coöperation if they are told, not too far in advance, but just before the procedure is carried out, that they will have a little pain, and an explanation be given as to why it is necessary for them to have the pain. Failing coöperation, a light general anesthesia is preferable, because psychic trauma will do the child more harm than a light anesthetic. The lack of responsibility or worries of a child is a great aid in a smooth convalescence. This care-free attitude should not be marred by the child's apprehension or fear of the surgeon, and hence painful treatments should be avoided.

A child will get desperately sick quicker and die, or recover quicker, than an adult with the same disease. This requires alert, correct thinking on the part of the surgeon, who must be able

[5] McKhann, C. F., and Chu, F. T.: J. Infect. Dis., 52:268, 1933.

to make decisions based on experience and accurate observation. Children cannot tolerate prolonged anesthesia or formidable surgical procedure as well as adults. Rough technique, which is undesirable, but may be passable in adult surgery, will more often lead to disaster in children. The chemical and metabolic processes progress with greater speed in children than in adults. They will develop shock, acidosis or other chemical disturbances with amazing speed, and must be watched clinically more closely than adults. Their delicate tissues must be handled with great gentleness, and the best results follow if the surgeon is able to do the operation efficiently and quickly. Close coöperation with pediatrician is essential.

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BISMUTH TOXIC REACTIONS

At the present time, bismuth ranks equal in importance and frequency of use in the treatment of syphilis, with arsphenamin. Yet the toxic effects and reactions of bismuth are much less frequently discussed, possibly because they are less frequently observed than those of arsenicals, and partly because of the more recent introduction of bismuth into therapeutics. However, with the accumulation of clinical observations, a clearer picture is obtained of the possible toxic effects of bismuth therapy. A good, comprehensive review of the subject is presented by Irgang, Alexander, and Sala of New York (*Archives, Dermatology and Syphilology,* 21:321, 1933).

A number of useful practical observations and clinical deductions are offered. One of them is that the rate of improvement of syphilitic skin lesions, from soluble bismuth preparations, exceeds only by a very slight margin that of the insolubles. In other words, insoluble preparations, having about the same quotient of efficiency should be preferred, being the safer of the two because of the slower absorption. Of the soluble salts, bismuth tartrate is regarded as the most effective; of the insoluble salts, bismuth salicylate. Intravenous administration of bismuth is cautioned against, as being extremely dangerous.

An interesting statement is that small doses are just as effective as large ones, provided the ionization of the bismuth molecule is of sufficient extent. Bismuth is more toxic to the kidneys than to the liver. Unlike arsenicals, bismuth does not tend to aggravate the existing hepatitis. In the presence of impaired renal function, injections of bismuth must be stopped.

With a rising systolic blood pressure over 150 millimeters, and of diastolic above 100 millimeters present, bismuth injections should be discontinued until the functional capacity of kidneys is determined.

The most common complication of bismuth therapy is stomatitis and blue gum line. It was present practically in 100 per cent of cases, the only exception being patients with no teeth at all. In the case of a heavy gum line appearing after a few injections, the dosage should be reduced or treatment stopped. Besides the gingival type, two other types of buccal siderosis may be observed: (1) diffuse, thin, slate-colored pigmentation; (2) localized heavy, bluish-black deposit.

Contrary to the prevailing idea, complications are more frequent with soluble preparations, because they enter the blood stream in a shorter period of time; and since the rate of absorption is greater than that of excretion, there results a greater concentration and accumulation of bismuth in the tissues.

The development of stomatitis, however slight, is a definite indication for discontinuing treatment. In cases of severe stomatitis, sodium thiosulphate should be started from small doses, slowly increasing, since the large doses, liberating large amounts of bismuth from the tissues, may aggravate the symptoms.

Skin manifestations of bismuth intolerance can assume urticarial, eczematous pityriasis rosea-like, and lichen planus pemphygoid types. Paradoxically, and in contradistinction to arsenicals, bismuth eruptions, according to the authors, improve with continuation of injections.

As to the local reactions, which occur mostly in females, water-soluble bismuth preparations produce greater local inflammation and pain. Bismuth salicylate and quinin bismuth iodid (in my experience, also iodobismuthol) proved to be the least irritating locally.

Urinary casts, even in large numbers, are no contraindication to bismuth therapy, provided the kidney function is within normal limits. Total weekly dose of an oil-soluble compound should be about 100 milligrams of metallic bismuth. But 10 per cent suspension of bismuth salicylate in a vegetable oil is the most effective preparation.

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Vitamins and Hormones.—Kühnau and Stepp discuss the relations between vitamins and hormones. Recently it has been shown that the animal cell participates in the preparation of vitamins and that the exogenic origin, formerly assumed as self-evident, can no longer be considered a characteristic quality of the vitamins. There are interrelations and transitional states between vitamins and hormones. The knowledge about the interrelations between vitamins and hormones has been advanced by chemical studies and by biologic experiments. It has been found that the relation between fat soluble vitamins and the hormones of the gonads is based on their chemical relationship. The authors illustrate this with structural formulas. They cite biologic observations on the correlations between vitamins A and B, the thyroid and iodin metabolism. Vitamin B influences thyroidal action, and under normal conditions there seems to be a relation between the suprarenal cortex, the thyroid and vitamin B. The authors discuss the influence of vitamins A and E on the sexual functions, the relations between the anterior lobe of the hypophysis and vitamin E, and the synergism of vitamin D and the hormone of the parathyroids.—***Münchener medizinische Wochenschrift.***